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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

13 APR 2005

Applicant's or agent's file reference 2002604		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/ES 02/0487	International filing date (day/month/year) 15.10.2002	Priority date (day/month/year) 15.10.2002	
International Patent Classification (IPC) or both national classification and IPC G01B7/16			
Applicant VERDTECH, UN NUEVO CAMPO, S.A. et al.			
<p>1. This International preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 1 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand 22.04.2004		Date of completion of this report 27.07.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Dighaye, J-L Telephone No. +49 89 2399-2823	



**INTERNATIONAL PRELIMINARY
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International application No. **PCT/ES 02/00487**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-15 as originally filed

Claims, Numbers

1-4 as amended (together with any statement) under Art. 19 PCT

Drawings, Sheets

1/9-9/9 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-4
	No: Claims	
Inventive step (IS)	Yes: Claims	1-4
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-4
	No: Claims	

2. Citations and explanations

see separate sheet

To Section V

1. Claim 1 is directed to a dendrometer characterised by a sensor comprising a cylindrical body and a sheet, both made of aluminium. Extension measurement bands are mounted on the sheet. One end of the sheet is fixed to the body, the other one is in contact with the plant to be measured. Such characterising features come from original claim 8.

The documents cited in the International Search Report (ISR) are not particularly relevant to such features:

- US-A-5 955 679 is relevant to original claim 1 only, which does not contain the above-mentioned features. That document discloses a completely different construction, as it is apparent from the figures and the passages cited in the ISR;
- the data sheet and the textbook cited in the ISR in combination with the first document are presently not relevant either. They relate to features - which in effect may appear obvious - of extension bands or strain gauges arranged in a Wheatstone bridge circuit configuration. Such features are no longer claimed in the present set;
- US-A-4 294 015 discloses an extensometer which "includes essentially two flexible plates [...] each having a strain gauge" (col. 2, 36-37). There is no disclosure that such sheets are fixed to a cylindrical body of aluminium;
- US-A-4 290 311 discloses a dilatometer with strain sensing means 21 arranged around tensile members 18,20 (Fig. 1). Again, this is not at all the presently claimed arrangement.

2. The other claims all depend upon claim 1.

Important remark on clarity and essential features

Claim 1 fails to specify how a pressure is exerted on the plant by the sheet. On the other hand, one does not see why the fact that the sensor is formed by a cylindrical body provides the precision measurements as claimed. It is in present claim 3, apparently corresponding to the embodiment of Fig. 10, that the concrete arrangement

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of the cylindrical body with respect to a corresponding cylindrical cavity, together with a number of rods connected to the plant, is specified. Such an arrangement provides "optimum control of the dimensional changes of the plant", which is the very purpose of the invention (see present description, p. 1, ll. 17-18).

Therefore, the features of present claim 3 are essential to the invention, and they provide the required clarity. If the application is prosecuted, for instance in the European phase, the applicant should best propose a new claim 1 comprising, in combination, the features of present claims 1 and 3.

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CLAIMS

1st. - Precision dendrometer, of the type based on the use of extension measurement bands as resistances for a Wheatstone Bridge type circuit, that said dendrometer consists of a sensor holder that serves as a part for securing the dendrometer to a plant, the electronic interface that connects it to the data collector equipment and a sensor; characterised in that said sensor is formed by a cylindrical body (13) of aluminium to which one end of an aluminium sheet (10) on which the extension measurement bands are mounted, is fixed; the other end of the aluminium band (10) being in contact with the plant (18), determining, by means of the pressure exerted by this latter, its dimensional variations.

2.- Precision dendrometer, according to the previous claim, characterised in that the end of the aluminium sheet (10) in contact with the plant has a double bend with convergent side edges, forming an approximately triangular angular and rounded end (11).

3.- Precision dendrometer, according to claim 1, characterised in that the sensor holder (15) has a part with a cylindrical cavity where the cylindrical body (13) of the sensor is housed and held, a number of rods (16) acting as feet being connected with said part of the sensor holder (15), to which a part (17), for adjusting and securing to the plant (8) in which the dendrometer is installed, is linked.

4.- Precision dendrometer, according to claim 3, characterised in that the rods (16) are fabricated from material that has zero coefficient of expansion, to allow the constant variation microns of the plant (18) to be measured.

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